

WHAT IS CLAIMED IS:

1. A method for forming a pattern on a substrate, comprising:
applying a precursor comprising at least one metal to a substrate to form a precursor layer;
exposing a predetermined portion of the precursor layer; and
developing the predetermined portion of the precursor layer, thereby at least substantially removing the predetermined portion from the substrate and forming a pattern on the substrate comprising a remaining portion of the precursor.
2. The method of Claim 1, wherein the precursor comprises a molecular precursor.
3. The method of Claim 1, wherein the precursor comprises particles in contact with at least one ligand.
4. The method of Claim 3, wherein the particles comprise sol particles.
5. The method of Claim 3, wherein the particles comprise microparticles.
6. The method of Claim 3, wherein the particles comprise nanoparticles.
7. The method of Claim 3, wherein the particles comprise ceramics.
8. The method of Claim 3, wherein the particles comprise alloys.
9. The method of Claim 4, further comprising transforming the precursor into a gel.
10. The method of Claim 1, wherein the precursor comprises $\text{Ti}(\text{Pr}^i\text{O})_2(\text{EAA})_2$.
11. The method of Claim 1, wherein the precursor comprises $\text{Ag}(\text{I})(\text{tfacac})$.
12. The method of Claim 1, wherein said exposing comprises photochemically reacting, photothermally reacting and combinations thereof.
13. The method of Claim 1, wherein said exposing comprises radiating the predetermined portion of the precursor layer with electromagnetic radiation.

14. The method of Claim 1, wherein the electromagnetic radiation comprises ultraviolet radiation.

15. The method of Claim 1, wherein said developing comprises contacting the first predetermined portion with a polar solvent.

16. The method of Claim 1, wherein said developing comprises contacting the first predetermined portion with a protic solvent.

17. The method of Claim 1 further comprising:
exposing a second predetermined portion of the precursor layer; and
developing the second predetermined portion of the precursor layer, thereby at least substantially removing the second predetermined portion from the substrate and forming a second pattern on the substrate comprising a second remaining portion of the precursor.

18. The method of Claim 1, further comprising pre-exposing the precursor layer to energy before said exposing.

19. The method of Claim 18, wherein said pre-exposing comprises photochemically reacting, photothermally reacting and combinations thereof.

20. The method of Claim 18, wherein the pre-exposing comprises radiating the predetermined portion of the precursor layer with electromagnetic radiation.

21. The method of Claim 18, wherein the electromagnetic radiation comprises ultraviolet radiation.

22. The method of Claim 18, wherein the pre-exposing further comprises selecting a predetermined fraction of a minimum energy necessary for developing the predetermined portion of the precursor.

23. The method of Claim 18, further comprising post-exposing the precursor to energy after said exposing step.

24. The method of Claim 1 further comprising post-exposing the precursor to energy after said exposing step.

25. The method of Claims 23 or 24, wherein said post-exposing comprises photochemically reacting, photothermally reacting and combinations thereof.

26. The method of Claims 23 or 24, wherein the post-exposing comprises radiating the predetermined portion of the precursor layer with electromagnetic radiation.

27. The method of Claim 23 or 24, wherein the electromagnetic radiation comprises ultraviolet radiation.

28. An electronic component formed by a process comprising:
applying a precursor comprising at least one metal to a substrate to form a precursor layer;
exposing a predetermined portion of the precursor layer; and
developing the predetermined portion of the precursor layer, thereby at least substantially removing the predetermined portion from the substrate and forming a pattern on the substrate comprising a remaining portion of the precursor.

29. The electronic component of Claim 28, wherein the precursor comprises a molecular precursor.

30. The electronic component of Claim 28, wherein the precursor comprises particles in contact with at least one ligand.

31. The electronic component of Claim 30, wherein the particles comprise sol particles.

32. The electronic component of Claim 30, wherein the particles comprise microparticles.

33. The electronic component of Claim 30, wherein the particles comprise nanoparticles.

34. The electronic component of Claim 30, wherein the particles comprise ceramics.

35. The electronic component of Claim 30, wherein said particles comprise alloys.

36. The electronic component of Claim 31, further comprising transforming the precursor into a gel.

37. The electronic component of Claim 28, wherein the process further comprises pre-exposing the precursor to energy before said exposing.

38. The electronic component of Claim 28, wherein the process further comprises post-exposing the precursor to energy after said exposing.

39. The electronic component of Claim 37, wherein the process further comprises post-exposing the precursor to energy after said exposing.

40. A precursor comprising:

a metal-containing material comprising $\text{Ti}(\text{Pr}^i\text{O})_2(\text{EAA})_2$ or any isomer thereof; and
a casting solvent.

41. A film of material comprising $\text{Ti}(\text{Pr}^i\text{O})_2(\text{EAA})_2$ or any isomer thereof.

42. An electronic component comprising:

a substrate; and

a metal-containing material comprising $\text{Ti}(\text{Pr}^i\text{O})_2(\text{EAA})_2$ or an isomer thereof
applied to said substrate.